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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,131	04/05/2001	Graham Mensa-Wilmot	05516.088001	4894

22511 7590 03/06/2003

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HOUSTON, TX 77010

EXAMINER

PETRAVICK, MEREDITH C

ART UNIT	PAPER NUMBER
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3671

DATE MAILED: 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/827,131

Applicant(s)

MENSA-WILMOT ET AL.

Examiner

Meredith C Petravick

Art Unit

3671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 26 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 10/10/02 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9,12.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 12/26/02 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1-2, 5-8 and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Sinor 6,302,223 B1.

Sinor discloses a drill bit comprising:

- a bit body (12) with blades (14)
- polycrystalline diamond (Column 7, line 2) compact cutting element (160)  
including a substrate and polycrystalline diamond layer (Fig. 4).

The interface between the substrate and polycrystalline diamond layer is non-planar (Fig.4). The polycrystalline diamond compact cutting elements “of relatively large diameter, such as 19 mm ( $\approx$  0.75 inch) or 25 mm ( $\approx$  1 inch).” (Column 7, line 14-16). This broad statement discloses the claimed range with sufficient specificity to anticipate the claims. Sinor discloses that a large diameter bit is used and the specific examples of what a large diameters in the range of large diameter bits. Further, when the diameters were converted from mm to inches, they were rounded and not given exactly. Also, the specification gives no evidence of unexpected results within the claimed range. See MPEP 2131.03.

In regards to claim 7-8 and 15-16, the polycrystalline diamond cutter can be elliptical (Column 7, lines 16-21).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. If applicant disagrees with the rejection under 35 U.S.C. 102, Claims 1-2, 5-8 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinor in the alternative.

Sinor discloses a drill bit comprising:

- a bit body (12) with blades (14)
- polycrystalline diamond (Column 7, line 2) compact cutting element (160)  
including a substrate and polycrystalline diamond layer (Fig. 4).

Art Unit: 3671

The interface between the substrate and polycrystalline diamond layer is non-planar (Fig.4). However, Sinor discloses the polycrystalline diamond compact cutting elements having a “relatively large diameter, such as 19 mm ( $\approx$  0.75 inch) or 25 mm ( $\approx$  1 inch).” (Column 7, line 14-16) instead of a range greater than 20 mm but less than 25 mm.

“A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of “having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium” as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.)” See MPEP 2144.05.

It would have been obvious to one having ordinary skill in the art at the time the invention was made given the statement in Sinor that the cutting elements have a relatively large diameter, such as 19 mm or 25 mm, to make diameter greater than 20 mm but less than 25 mm. The statement in Sinor suggests that large diameter bit between 19 mm and 25 mm can be used.

In regards to claim 7-8 and 15-16, the polycrystalline diamond cutter can be elliptical (Column 7, lines 16-21).

Claims 3-4, 9-12 and 17-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinor.

Sinor discloses the claimed invention as described above and including an exposure. However, Sinor fails to disclose the polycrystalline diamond layer having a thickness between

Art Unit: 3671

0.140 inches and 0.240 inches or an exposure being 11 mm. The specification does not provide any criticality to the thickness of the polycrystalline diamond layer, or to the exposure. It merely states that these dimension are not the common dimensions. Therefore, without any criticality disclosed in the specification, it would be obvious to one having ordinary skill in the art at the time the invention was made make the polycrystalline diamond layer have a thickness between 0.140 inches and 0.240 inches or the exposure 11 mm.

### ***Response to Arguments***

6. Applicant's arguments filed 12/26/03 are not persuasive.

In the amendment filed 12/26/03, applicant amended the range of the diameter of the bit from 19 mm to 25 mm to a range of "greater than 20 mm, but less than 25mm." Applicant argues that this new range is not disclosed in Sinor. In response to this amendment, please see the modified rejection above.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 3671

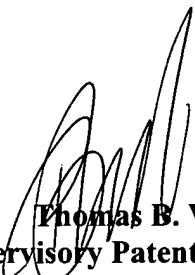
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meredith Petravick whose telephone number is 703-305-0047.

The examiner can normally be reached on Monday-Thursday from 7:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached at 703-308-3870.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-1113. The fax number for this Group is 703-305-3597.



**Thomas B. Will**  
**Supervisory Patent Examiner**  
**Group Art Unit 3671**

MCP  
March 4, 2003